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Test Report on Compressive Strength of Concrete Cubes

Project	Construction of Govt. School Rooms, Palanahalli and Kattigehalli Village in Ward No.05 (Kattigehalli)
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Sri.T K SHANKARAPPA (MESPC INFRA PROJECTS PRIVATE LIMITED)
Location:	site
Grade of concrete:	M20
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	18-03-2019	15-04-2019	28 days	8.583	22500	451	20.04	20.15
2	18-03-2019	15-04-2019	28 days	8.662	22500	456	20.27	
3	18-03-2019	15-04-2019	28 days	8.563	22500	453	20.13	

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Project	Improvements to Roads and Drains Thirumenahalli And Surrounding Area in Ward no 5.
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Sri.T K SHANKARAPPA (MESPC INFRA PROJECTS PRIVATE LIMITED)

AGGREGATE IMPACT VALUE (IS: 2386 Part - 4)

Proposed Use	BC	**Date of Sampling**	**16-04-2019**
Sample Location	At plant	**Date of Testing**	**16-04-2019**

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	398.00	394.00	380.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	302.00	295.00	290.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	96.00	99.00	90.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	24.12	25.13	23.68	
5	Average Aggregate impact value	(%)	24.31			Max - 30 %

Remarks : ✓ Satisfactory / Not Satisfactory

Consultant's Representative

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Project	Improvements to Roads and Drains Kogilu Layout And Surrounding Area in Ward no 5.
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Sri.T K SHANKARAPPA (MESPC INFRA PROJECTS PRIVATE LIMITED)

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Type of Material	BC	**Proposed Use**	BC
Sample Location	At plant	**Date of Sampling**	16-04-2019
		Date of Testing	16-04-2019

Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	Retained on IS sieve, mm	**Total wt. of aggregate retained on sieves (A) gms.**	**Wt. of aggregate passing from Flakiness gauge (B) gms**	**Wt. of aggregate retained on Flakiness gauge (C) gms**	**Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms**
63	50	0	0	0	0
50	40	0	0	0	0
40	31.5	0	0	0	0
31.5	25	0	0	0	0
25	20	0	0	0	0
20	16	945	110	835	75
16	12.5	1125	80	1045	125
12.5	10	680	75	605	55
10	6.3	585	70	515	50
Total		**3335**	**335**	**3000**	**305**

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	10.04
Elongation Index(%):	10.17
Combined FI+EL (%)	20.21

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Name of Work	:	Improvements to Roads and Drains in Kogilu Layout and Surrounding areas in Ward No. 05
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	Sri.T K SHANKARAPPA (MESPC INFRA PROJECTS PRIVATE LIMITED)
Date of Testing	:	16-04-2019
Type of Mix	:	BC
Sample I.D	:	BC2

GRADATION FOR BC
(As per MORT&H 500-18,Grading-2)

Sample Location:	At plant	Date of Sampling:	16-04-2019
		Date of testing:	16-04-2019
Type of material & Purpose:	BC	Oven Dry Wt.(gms):	1200.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	125	120.0	10.00	90.00	79 - 100
9.50	80	198.0	16.50	83.50	71 - 95
4.75	220	418.0	34.83	65.17	53 - 71
2.360	150	568.0	47.33	52.67	42 - 58
1.180	135	703.0	58.58	41.42	34 - 48
0.600	120	825.0	68.75	31.25	26 - 38
0.300	90	915.0	76.25	23.75	18 - 28
0.150	75	990.0	82.50	17.50	12 - 20
0.075	115	1105.0	92.08	7.92	4 - 10
Pan	95.0	1200.0			
Total	1200.0				

Consultant's Representative

BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

TEJUS CONSULTANTS

Name of Work	:	Improvements to Roads and Drains Kogilu Layout And Surrounding Area in Ward no 5.
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	Sri.T K SHANKARAPPA (MESPC INFRA PROJECTS PRIVATE LIMITED)
Date of Testing	:	16-04-2019
Type of Mix	:	BC
Sample I/D	:	BC2

DETERMINATION OF BITUMEN CONTENT

Description	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	928	912
2. Weight of Mixture after extraction, g	878	859
3. Weight of Bitumen	50	53
4. Weight of filter paper before extraction, g	2.00	2.15
5. Weight of filter paper after extraction, g	4.10	4.00
6. Weight of fines, g	2.10	1.85
7. Weight of Bitumen & fines	52.10	54.85
8. Bitumen content in %	5.61	6.01
9. Average Bitumen content in %	**5.81**	
10. Minimum Bitumen content in %	**5.80**	

GRADATION FOR BC AFTER EXTRACTION

(As per MORT&H 500-18,Grading-2)

Sample Location:	At site		Date of Sampling:		
			Date of testing:		
Type of material & Purpose:	BC		Oven Dry Wt.(gms):	878.0	
IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	88	88.0	10.02	89.98	79 - 100
9.50	140	208.0	23.69	76.31	71 - 95
4.75	90	293.0	33.37	66.63	53 - 71
2.360	150	435.0	49.54	50.46	42 - 58
1.180	125	532.0	60.59	39.41	34 - 48
0.600	85	617.0	70.27	29.73	26 - 38
0.300	71	688.0	78.36	21.64	18 - 28
0.150	45	733.0	83.49	16.51	12 - 20
0.075	91	824.0	93.85	6.15	4 - 10
Pan	54.0	878.0			
Total	878.0				

Consultant's Representative

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Name of Work	:	Improvements to Roads and Drains Kogilu Layout And Surrounding Area in Ward no 5.
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	Sri.T K SHANKARAPPA (MESPC INFRA PROJECTS PRIVATE LIMITED)
Date of Testing	:	16-04-2019
Type of Mix	:	Tack coat
Sample I/D	:	2

DETERMINATION OF RATE OF SPREAD TACK COAT

Determination	Unit	Test No	
		1	2
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.798	0.775
Final weight of plate after application of tack Coat (c)	Kg	0.821	0.798
Weight of tack Coat (d=c-b)	Kg	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.256	0.256
Average	Kg/sq.m	0.256	
Specified Limit	Kg/sq.m	**0.250 Kg/sq.m**	

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Consultant's Representative

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Project	Improvements to Roads and Drains Kogilu Layout And Surrounding Area in Ward no 5.
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Sri.T K SHANKARAPPA (MESPC INFRA PROJECTS PRIVATE LIMITED)

AGGREGATE IMPACT VALUE (IS: 2386 Part - 4)

Proposed Use	BC	**Date of Sampling**	**17-04-2019**
Sample Location	At plant	**Date of Testing**	**17-04-2019**

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	396.00	392.00	398.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	304.00	300.00	308.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	92.00	92.00	90.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	23.23	23.47	22.61	
5	Average Aggregate impact value	(%)	23.10			Max - 30 %

Remarks : ✓ Satisfactory / Not Satisfactory

Consultant's Representative

TEJUS
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Project	Improvements to Roads and Drains Kogilu Layout And Surrounding Area in Ward no 5.
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Sri.T K SHANKARAPPA (MESPC INFRA PROJECTS PRIVATE LIMITED)

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Type of Material	BC	Proposed Use	BC
Sample Location	At plant	Date of Sampling	17-04-2019
		Date of Testing	17-04-2019

Size of aggregate		Flakiness Index		Elongation Index	
Passing through IS sieve, mm	Retained on IS sieve, mm	Total wt. of aggregate retained on sieves (A) gms.	Wt. of aggregate passing from Flakiness gauge (B) gms	Wt. of aggregate retained on Flakiness gauge (C) gms	Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms
63	50	0	0	0	0
50	40	0	0	0	0
40	31.5	0	0	0	0
31.5	25	0	0	0	0
25	20	0	0	0	0
20	16	1200	118	1082	100
16	12.5	1140	70	1070	130
12.5	10	650	85	565	48
10	6.3	585	90	495	50
Total		**3575**	**363**	**3212**	**328**

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	10.15
Elongation Index(%):	10.21
Combined FI+EL (%)	20.37

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BITUMEN CONTENT AND GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

TEJUS CONSULTANTS

Name of Work	:	Improvements to Roads and Drains Kogilu Layout And Surrounding Area in Ward no 5.
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	Sri.T K SHANKARAPPA (MESPC INFRA PROJECTS PRIVATE LIMITED)
Date of Testing	:	17-04-2019
Type of Mix	:	BC
Sample I/D	:	BC3

DETERMINATION OF BITUMEN CONTENT

Description	Trail 1	Trail 2
1. Weight of Mixture before extraction, g	925	910
2. Weight of Mixture after extraction, g	878	859
3. Weight of Bitumen	47	51
4. Weight of filter paper before extraction, g	2.00	2.15
5. Weight of filter paper after extraction, g	4.10	4.00
6. Weight of fines, g	2.10	1.85
7. Weight of Bitumen & fines	49.10	52.85
8. Bitumen content in %	5.31	5.81
9. Average Bitumen content in %	**5.56**	
10. Minimum Bitumen content in %	**5.80**	

GRADATION FOR BC AFTER EXTRACTION

(As per MORT&H 500-18,Grading-2)

Sample Location:	At site		Date of Sampling:		
			Date of testing:		
Type of material & Purpose:	BC		Oven Dry Wt.(gms):	878.0	
IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19.00	0	0	0.00	100.00	100.00
13.20	90	90.0	10.25	89.75	79 - 100
9.50	135	208.0	23.69	76.31	71 - 95
4.75	86	293.0	33.37	66.63	53 - 71
2.360	140	435.0	49.54	50.46	42 - 58
1.180	120	532.0	60.59	39.41	34 - 48
0.600	75	607.0	69.13	30.87	26 - 38
0.300	66	673.0	76.65	23.35	18 - 28
0.150	42	715.0	81.44	18.56	12 - 20
0.075	90	805.0	91.69	8.31	4 - 10
Pan	73.0	878.0			
Total	878.0				

Consultant's Representative

TEJUS
CONSULTANTS

Name of Work	:	Improvements to Roads and Drains in Kogilu Layout and Surrounding areas in Ward No. 05
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	Sri.T K SHANKARAPPA (MESPC INFRA PROJECTS PRIVATE LIMITED)
Date of Testing	:	17-04-2019
Type of Mix	:	BC
Sample I/D	:	BC3

GRADATION FOR BC

(As per MORT&H 500-18,Grading-2)

Sample Location:	At plant	Date of Sampling:	17-04-2019
		Date of testing:	17-04-2019
Type of material & Purpose:	BC	Oven Dry Wt.(gms):	1200.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
19	0	0	0.00	100.00	100.00
13.20	90	90.0	7.50	92.50	79 - 100
9.50	125	208.0	17.33	82.67	71 - 95
4.75	240	440.0	36.67	63.33	53 - 71
2.360	185	625.0	52.08	47.92	42 - 58
1.180	100	725.0	60.42	39.58	34 - 48
0.600	112	837.0	69.75	30.25	26 - 38
0.300	84	921.0	76.75	23.25	18 - 28
0.150	61	980.0	81.67	18.33	12 - 20
0.075	115	1095.0	91.25	8.75	4 - 10
Pan	105.0	1200.0			
Total	1200.0				

Consultant's Representative

TEJUS
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Name of Work	:	Improvements to Roads and Drains Kogilu Layout And Surrounding Area in Ward no 5.
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	:	Sri.T K SHANKARAPPA (MESPC INFRA PROJECTS PRIVATE LIMITED)
Date of Testing	:	17-04-2019
Type of Mix	:	Tack coat
Sample I/D	:	3

DETERMINATION OF RATE OF SPREAD TACK COAT

Determination	Unit	Test No	
		1	2
Size of Plate (mxm)	Mt	0.30 x .30	0.30 x .30
Area of Plate (a)	Sq.mtr	0.09	0.09
Initial Wt of empty Plate (b)	Kg	0.827	0.855
Final weight of plate after application of tack Coat (c)	Kg	0.850	0.878
Weight of tack Coat (d=c-b)	Kg	0.023	0.023
Rate of spread of tack coat	Kg/sq.m	0.256	0.256
Average	Kg/sq.m	0.256	
Specified Limit	Kg/sq.m	**0.250 Kg/sq.m**	

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Consultant's Representative

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Test Report on Compressive Strength of Concrete Cubes	
Project	Construction of Govt. School Rooms, Palanahalli and Kattigehalli Village in Ward No.05 (Palanahalli)
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Sri.T K SHANKARAPPA (MESPC INFRA PROJECTS PRIVATE LIMITED)
Location:	Cement
Grade of concrete:	M25
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	25-03-2019	22-04-2019	28 days	8.583	22500	576	25.60	25.26
2	25-03-2019	22-04-2019	28 days	8.662	22500	566	25.16	
3	25-03-2019	22-04-2019	28 days	8.563	22500	563	25.02	

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Test Report on Compressive Strength of Concrete Cubes

Project	Construction of Govt. School Rooms, Palanahalli and Kattigehalli Village in Ward No.05 (Palanahalli)
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Sri.T K SHANKARAPPA (MESPC INFRA PROJECTS PRIVATE LIMITED)
Location:	Cement
Grade of concrete:	M25
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	15-04-2019	22-04-2019	7 days	8.832	22500	368	16.36	16.30
2	15-04-2019	22-04-2019	7 days	8.864	22500	367	16.31	
3	15-04-2019	22-04-2019	7 days	8.721	22500	365	16.22	

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Test Report on Compressive Strength of Concrete Cubes	
Project	Construction of Govt. School Rooms, Palanahalli and Kattigehalli Village in Ward No.05 (Kattigehalli)
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Sri.T K SHANKARAPPA (MESPC INFRA PROJECTS PRIVATE LIMITED)
Location:	site
Grade of concrete:	M25
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	28-03-2019	25-04-2019	28 days	8.583	22500	565	25.11	25.13
2	28-03-2019	25-04-2019	28 days	8.662	22500	565	25.11	
3	28-03-2019	25-04-2019	28 days	8.563	22500	566	25.16	

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Test Report on Compressive Strength of Concrete Cubes	
Project	Construction of Govt. School Rooms, Palanahalli and Kattigehalli Village in Ward No.05 (Kattigehalli)
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Sri.T K SHANKARAPPA (MESPC INFRA PROJECTS PRIVATE LIMITED)
Location:	site
Grade of concrete:	M25
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	19-04-2019	26-04-2019	7 days	8.832	22500	368	16.36	16.31
2	19-04-2019	26-04-2019	7 days	8.864	22500	366	16.27	
3	19-04-2019	26-04-2019	7 days	8.721	22500	367	16.31	

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